

I CLAIM:

1. An airborne method for mapping and remotely reporting thermal and critical alignment evaluation data regarding the perimeter of a ground fire comprising

from an airborne platform which is deployed above and in selectable visual  
5 proximity to at least a portion of the perimeter line of a ground fire, gathering, along a substantially common line of sight, for remote transmission, linked thermal and optical imagery data interpretable for picturing positionally-defined thermal information relating to a selected region on and along such a perimeter-line portion,

substantially simultaneously, and in relation to said gathering with respect to such  
10 a selected region, additionally acquiring related critical-alignment, fire-information evaluation data including air temperature, relative humidity, wind speed, and wind direction, and

transmitting such thermal, optical and critical-alignment evaluation data to, and for reception and interpretation at, a remote site.

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2. The method of claim 1 which further includes, with respect to such a selected perimeter-line region, noting, relative to the platform, the associated angular disposition in space of the associated substantially common line of sight along which such optical and thermal data for that region is gathered.

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3. The method of claim 2 which further comprises enabling said optical and thermal imagery data gathering to take place selectively along an infinitely different number of selectable, spatially-oriented, substantially common lines of sight.

4. The method of claim 3 which further comprises effectively linking, relative to a selected perimeter-line region, the linear distance along the associated, substantially common line of sight between the selected region and the airborne platform.

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5. The method of claim 1 which further includes associating with such optical, thermal, and critical-alignment evaluation data, GPS information which is effective to define the then-associated positions in space, relative to one another, of the selected region and the airborne platform.

6. Apparatus for temperature and critical-alignment evaluation mapping and remote reporting regarding a region of a ground-fire perimeter comprising

optical and thermal imaging structure mountable on a support platform for  
5 disposition and movement above and over a ground fire, operable to create a flow of imagery data which is interpretable for picturing, visually, the temperature-level-differentiated perimetral outline of at least a portion of the perimeter of such a fire,

atmospheric-condition sensing structure also mountable on such a platform for cooperative behavior in relation to said imaging structure, operable when so also  
10 mounted, to generate a flow of atmospheric-condition data containing information selected from the list including (a) air temperature, (b) relative humidity, (c) wind speed, and (d) wind direction, and

transmission reporting structure, operatively connected to said imaging structure and to said sensing structure, operable to transmit from the mentioned support platform to  
15 a remote location such imagery and atmospheric-condition data.

7. The apparatus of claim 6, wherein said support platform is an airborne platform.

8. The apparatus of claim 7 which further comprises GPS sensing structure also mountable on the mentioned platform, operable to produce GPS positional information which is relevant both to the mentioned optical and thermal imagery data and  
5 to the mentioned atmospheric-condition data, as such data is associated both with the imaged portion of a fire perimeter line, and with the then relative position of the support platform.

9. The apparatus of claim 6 which further comprises structure also mountable  
10 on the mentioned support platform for reporting, with respect to a selected optically- and thermally-imaged region of a ground-fire perimeter, the line-of-sight angular disposition in space which relates that region with the then position of the mentioned support platform.

10. An airborne system for mapping and remotely reporting temperature and critical alignment evaluation data regarding the perimeter of a ground fire comprising an airborne platform deployable and movable above and over a ground fire, coordinated optical and thermal imaging structure mounted on said platform, characterized effectively with a spatially angularly adjustable, substantially common, optical and thermal view axis, and operable to create a coordinated and remotely communicatable flow of linked optical and thermal imagery data which is interpretable for picturing the temperature-level-differentiated perimetral outline of at least a portion of such a ground fire, and critical alignment data-gathering structure operatively associated with said imaging structure, also mounted on said support platform, and operable to produce, in relation to such a first-mentioned data flow, a like, remotely communicatable, companion data flow containing related critical-alignment evaluation data including information regarding (a) air temperature, (b) relative humidity, (c) wind speed, and (d) wind direction.

11. An airborne ground-fire data-gathering method comprising  
from an airborne platform, gathering, for visual presentation and viewing  
purposes, related optical and thermal fire-perimeter data,

5 also from an airborne platform, gathering critical-alignment evaluation data  
which is associated with and relevant to such optical and thermal data, and

transmitting all of such data, effectively in a geophysically-linked manner, to a  
remote site for map-display viewing and evaluation.

10 12. The method of claim 11 which further comprises applying to such  
gathered data selected critical-alignment, severity-scale parameters which are employable  
generally to rank, from lower to higher, fire severity conditions in terms of prioritizing  
the deployment of fire-fighting resources, and from, and on the basis of, said applying,  
effectively map-highlighting, also for viewing and evaluation, selected parts of the  
15 gathered data which indicate certain higher-severity fire conditions.